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A statistical analysis of the career intentions of mobilized Navy enlisted selected reservists (SELRES)

White, Kenneth P.

Monterey, California. Naval Postgraduate School

NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

A STATISTICAL ANALYSIS OF THE CAREER INTENTIONS OF MOBILIZED NAVY ENLISTED SELECTED RESERVISTS (SELRES)

by

Kenneth P. White

June 2007

Thesis Co-Advisors: Kathryn Kocher
Stephen Mehay

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This thesis examines the career intentions of mobilized Navy enlisted selected reservists (SELRES). A logistic regression model is estimated to explain the effects of mobilization on reservists' intentions to stay to retirement. The statistical analysis uses data from the *2002-2004 Naval Reserve Career Decision Survey,* which provides information on the demographics, reserve characteristics, and mobilization experiences of currently or recently mobilized enlisted SELRES members. Results indicate that mobilization experiences (previously mobilized, command leadership at the gaining command, assigned to an interesting job, effect on civilian job, and the difference in pay between active and active duty pay while mobilized) are significant factors influencing a mobilized SELRES member's intention to stay to retirement. However, only a few of the demographic and reserve characteristics significantly impact a SELRES member's career intentions. Recommendations for expanding data collection and for follow-on studies are provided and implications for Navy SELRES mobilization policy are discussed.

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Kenneth P. White
Lieutenant, United States Navy Reserve
B.S., University of Illinois, 1999

Submitted in partial fulfillment of the
requirements for the degree of

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June 2007

Author: Kenneth P. White

Approved by: Kathryn Kocher
Thesis Co-Advisor

Stephen Mehay
Thesis Co-Advisor

Robert N. Beck, Dean
Graduate School of Business and Public Policy

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This thesis examines the career intentions of mobilized Navy enlisted selected reservists (SELRES). A logistic regression model is estimated to explain the effects of mobilization on reservists' intentions to stay to retirement. The statistical analysis uses data from the *2002-2004 Naval Reserve Career Decision Survey,* which provides information on the demographics, reserve characteristics, and mobilization experiences of currently or recently mobilized enlisted SELRES members. Results indicate that mobilization experiences (previously mobilized, command leadership at the gaining command, assigned to an interesting job, effect on civilian job, and the difference in pay between active and active duty pay while mobilized) are significant factors influencing a mobilized SELRES member's intention to stay to retirement. However, only a few of the demographic and reserve characteristics significantly impact a SELRES member's career intentions. Recommendations for expanding data collection and for follow-on studies are provided and implications for Navy SELRES mobilization policy are discussed.

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I. INTRODUCTION

A. PURPOSE

This thesis explores the demographic characteristics and mobilization experiences that impact Navy enlisted Selected Reservists' (SELRES) career intentions. With active-duty force shaping continually taking place and increased operational commitments, the reserves are increasingly relied upon to augment the active force to "provide mission capable-units and individuals to the Navy and Marine Corps Team throughout the full range of military operations from peace to war."[1] The United States has been fighting the Global War on Terrorism (GWOT) for over five years (as of 2007) and although progress has been made, there is no definitive end in sight for this fight or the mobilization of SELRES.

SELRES members can now expect to be mobilized one year out of every six. (Faram, 2006) Prior to 9/11, it was asked "what impact does mobilization or the possibility of mobilization have on a SELRES' career intentions?" It is no longer a matter of "if" but "when and how often" Selected Reservists will be mobilized. In January 2007, the Pentagon changed its policy on the length of time a SELRES could be mobilized. Prior to this change, the cumulative time a SELRES could be mobilized was 24 months. Now reservists can be mobilized for up to 24 months, demobilized, and then mobilized again for up to another 24 months. However, Chairman of the Joint Chiefs of Staff,

[1] Naval Reserve Official Web Site: History, http://navyreserve.navy.mil/Public/Staff/WelcomeAboard/MissionAndHistory/default.htm (accessed April 10, 2007).

General Pace said, "the Pentagon intends to limit all future mobilizations to 12 months."[2] The goal of this thesis is to identify those demographic and reserve characteristics and mobilization experiences that impact SELRES career intentions, and to provide recommendations to assist the Navy in modifying or creating policies and programs to improve SELRES retention.

B. HISTORY AND BACKGROUND

For over 250 years the Navy Reserve has played an important role in the defense of the United States. Informally, even before the Continental Congress established the Continental Navy, the naval reserve or "citizen sailors" forced the British warship HMS Margaretta to surrender during the early part of the American Revolution and continued their support throughout the War by conducting raids on the British merchant fleet.[3] Although the Navy Reserve proved to be a valuable asset during the wars leading up to World War I, it was not until March 3, 1915 that the Naval Reserve Force was formally created. Since World War I, the Navy Reserve has demonstrated its capabilities during most conflicts including World War II, Korea, Vietnam, Desert Storm, the Global War on Terrorism and the "ethnic cleansing in the former Yugoslavia.[4]

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[2] Robert Burns (2007) Pentagon Abandons Active-Duty Time Limit. http://www.news.yahoo.com/s/ap/20070111/ap_on_go_ca_st_pe/us_iraq_military (accessed April 10, 2007).

[3] Naval Reserve Official Web Site: History, http://navyreserve.navy.mil/Public/Staff/WelcomeAboard/MissionAndHistory/default.htm (accessed April 10, 2007).

[4] Ibid.

Since the Global War on Terrorism began there have been about 42,000 SELRES and 3,000 FTS mobilizations.(Amos, 2007) Approximately 7,000 officers have been mobilized once and about 800 have been mobilized twice compared to 25,000 enlisted SELRES that have been mobilized once and about 4,000 that have been mobilized twice. Thus, nearly 5,000 SELRES have mobilized more than once.

Currently (2007) there are about 71,000 SELRES serving in the Navy Reserve, including 13,000 Full Time Support (FTS) personnel. (Amos, 2006) This year (2007) the number of SELRES mobilizations is expected to be about 9,000. Although Congress has authorized a maximum of 6,200 SELRES mobilizations at any one time, to allow an opportunity for a surge, the Navy Reserve will only mobilize 6,000 SELRES at once. (Amos, 2006)

The Navy Reserve receives a fresh supply of sailors every year who are needed to maintain the force and compensate for a annual turnover of 25 to 30 percent. Most new reserve accessions sailors (80 percent) who have recently left active duty service and have up to a two-year deferment on involuntary mobilizations. The previous one-year deferment was increased to a two year deferment in an attempt to attract more prior service sailors who may have experienced an increased operational tempo while on active-duty.

The increased operational tempo associated with the GWOT, coupled with continuing drawdown of the active and reserve forces, has led to concerns over the last five years that "sustained use of reserve forces will eventually harm the recruiting and retention of young men and women

willing to serve as future citizen Sailors, Marines and Coast Guardsmen."[5] This concern has recently come to fruition. In 2006 the Navy Reserve was 13 percent short of its recruiting goal even though the number of accessions required was the lowest it had been since FY2001. To counter this shortfall, leadership must continually evaluate the experiences of mobilized reservists to create or modify programs and policies to attain recruiting and retention levels required to maintain a mission-ready Navy Reserve.

C. CHARACTERISTICS OF THE NAVAL RESERVES COMPARED TO OTHER RESERVE COMPONENTS AND THE CIVILIAN POPULATION

The characteristics of members of the Navy Reserve differ from those of the other reserve components and the civilian population. These differences are shown in the reserve data for fiscal year 2004 (FY 2004) displayed in Tables 1 through 4. Characteristics such as age, gender, martial status, and prior active duty experience define an organization's culture. Knowledge and understanding of these characteristics can assist the organization in tailoring its programs and policies to attain its retention objectives.

1. Age

Table 1 illustrates the age composition of each reserve component and the civilian labor force for FY 2004. Approximately 48 percent of all Navy Reserve enlisted members are between 30-39 years old and 75 percent are at least 30 years old. Naval reservists are older than

[5] Joseph L. Barnes, Testimony of Master Chief Joseph L. Barnes, USN, 2004.

reservists in other services and their counterparts in the civilian labor force. This difference in age distribution is primarily due to the Navy Reserve's high percentage of prior service members and the fact that many Navy Reserve careers are technical and longer initial contracts are required for individuals in these occupations compared to non-technical fields. The labor intensive-requirements of infantry and other ground combat units explain why 85 percent of the Marine Corps Reserve and 55 percent of the Army Reserve is less than 30 years old.[6] Among the reserve components, the age distributions of the Air Force Reserve and the Air National Guard closely resemble the civilian age distribution.

Table 1. FY 2004 Selected Reserve Enlisted Members, by Age and Component and Civilian Labor Force Over 16 Years Old (Percent)

Age Group	Army National Guard	Army Reserve	Naval Reserve	Marine Corps Reserve	Air National Guard	Air Force Reserve	Total DoD	Civilians
17-19	9.7	10.3	0.8	12.2	3.4	2.5	7.8	4.0
20-24	26.3	27.7	9.1	53.4	17.0	13.2	24.2	10.2
25-29	16.2	16.6	15.1	19.7	14.0	12.9	15.8	10.7
30-34	13.2	12.2	22.1	7.6	14.4	14.0	13.7	11.2
35-39	12.7	12.1	25.6	4.2	16.9	18.3	14.3	11.8
40-44	10.2	10.3	16.8	2.1	15.8	18.1	11.8	12.9
45-49	5.6	5.9	6.5	0.6	8.5	10.2	6.3	12.6
50+	6.3	4.9	4.1	0.3	10.2	10.7	6.3	26.7
Unknown	0.0	*	0.0	*	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Office of the Under Secretary of Defense Personnel and Readiness, 2004

[6] Office of Under Secretary of Defense, Personnel and Readiness. Population Representation in the Military Services Fiscal Year 2004, http://www.defenselink.mil/prhome/poprep2004/reserve_enlisted/index.html (Accessed April 10, 2007).

2. Gender

Table 2 illustrates the gender composition of each reserve component and the civilian labor force for FY 2004. Primarily due to the nature of work in the military, the proportion of men greatly exceeds that of women. As a whole, the percentage of females in the reserves is similar to the active force.[7] However, the proportions differ by reserve component due to the type of units associated with each component. The Army National Guard and the Marine Corps Reserve, which primarily consist of combat units, have the smallest proportion of female enlisted service members. The Navy Reserve, Air Force Reserve and Army Reserve, which consist of a large number of support units, have the highest percentage of females. With a large proportion of females, the Navy must be cognizant of both genders in creating and modifying policies to improve retention.

Table 2. FY 2004 Selected Reserve Enlisted Members, by Gender and Component, and Civilian Labor Force 17 and Above Years Old (Percent)

Gender	Army National Guard	Army Reserve	Naval Reserve	Marine Corps Reserve	Air National Guard	Air Force Reserve	Total DoD	Civilians 17 years and older
Male	86.9	76.4	78.4	95.4	82.1	77.3	82.8	53.6
Female	13.1	23.6	21.6	4.6	17.9	22.7	17.2	46.4

Source: Office of the Under Secretary of Defense Personnel and Readiness, 2004

[7] Office of Under Secretary of Defense, Personnel and Readiness. (2004).

Table 3 illustrates the marital composition of the entire Selected Reserve enlisted force and the civilian labor force for FY 2004. Nearly 48 percent of SELRES are married. Fifty percent of males are married compared to about 61 percent of male civilians. Furthermore, only about 35 percent of female SELRES are married compared to about fifty-four percent of civilians. Of particular interest are the dual-service marriages. Twenty-one percent of females are in dual service marriages compared to only two percent of males. It is imperative that the Navy Reserve consider dual service marriages while continuing to focus on their policies and programs that promote a balance between family and military obligations.

3. Marital Status

Table 3. FY 2004 Selected Reserve Enlisted Members who are Married and in Dual-Service Marriages, by Gender, and Civilian Labor Force 17 and Above Years Old (Percent)

Gender	Selected Reserve	In Dual-Service Marriages*	Civilians 17 and Above
Male	50.1	2.2	60.8
Female	34.5	21.1	54.2
Total	47.4	4.6	57.8

Source: Office of the Under Secretary of Defense Personnel and Readiness, 2004

4. Race/Ethnicity

As seen in Table 4, each service component has a diverse population of race/ethnicity groups. The Army Reserve has the highest and Marine Corps have the smallest percentage of Blacks compared to the other reserve

components and the civilian labor force. All reserve components have a lower percentage of Asians compared to the civilian labor force, which may indicate an opportunity to increase accessions for this ethnicity group. The Navy has a greater percentage of members who report being of two or more races than any other reserve component or the civilian labor force. The Navy also reports having a smaller percentage Hispanics than the civilian labor force. The Navy Reserve should continue to take into account diverse race/ethnicity backgrounds when tailoring their policies and programs.

Table 4. FY 2004 Selected Reserve Enlisted Members, by Race/Ethnicity, Gender, and Component

Race/Ethnicity	Army National Guard	Army Reserve	Naval Reserve	Marine Corps Reserve	Air National Guard	Air Force Reserve	Civilian Labor Force
White	77.9	64.1	67.3	72.3	82.5	72.0	80.1
Black	15.3	26.1	18.8	9.6	9.4	19.0	12.4
American Indian & Alaskan Native	0.8	0.6	1.1	0.7	0.8	0.4	0.8
Asian	1.7	2.9	3.6	3.6	2.2	1.5	4.5
Pacific Islander	0.0	1.0	0.2	0.4	0.3	0.5	0.3
Two or more races	0.0	0.0	3.1	0.6	0.6	0.7	1.5
Unknown	4.3	5.3	5.9	12.8	4.1	5.9	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Hispanic	7.9	12.2	10.3	14.6	6.2	7.4	15.3
Not Hispanic	92.1	87.9	89.7	85.4	93.8	92.6	84.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Office of the Under Secretary of Defense Personnel and Readiness, 2004

5. Prior Service

Table 5. FY2000-FY2004 Navy Selected Reserve Non-Prior Service (NPS) and Prior Service Enlisted Accessions

Accessions	2000	2001	2002	2003	2004	Total
Prior Service	14,432	16,002	14,639	12,065	10,768	67,906
Non-Prior Service	3,073	3,652	5,197	6,208	2,756	20,886
Total	17,505	19,654	19,836	18,273	13,524	88,792

Source: Office of the Under Secretary of Defense Personnel and Readiness, 2004

All reserve components have members with prior active duty service. The proportion of prior service members varies among services depending on their internal requirements. The Marines, for example, have a much lower percentage of prior service compared to the Navy, which has one of the highest percentages of prior service members. In fact, from 2000 to 2004 the Navy Reserve recruited almost 90,000 SELRES, of whom 76 percent were prior service.[8] Many of the Navy's career fields are highly technical and it takes a lot of time and resources to train these individuals. The Navy Reserves saves training costs and improves mobilization readiness by recruiting and retaining individuals with these skills. Fortunately for the Navy and the Reserves, over the last ten years, the majority of the vacancies in the reserves have been filled by prior service individuals. However, as the active-duty force decreases so does the number of prior service members available and eligible for affiliation with the reserves.

[8] Office of the Under Secretary of Defense, Personnel and Readiness. (2000-2004).

During shortfalls, the Navy Reserve either recruits more non-prior service members or offers bonuses to retain those with the skill sets required to maintain surge readiness. Because it is unlikely that the Navy Reserve will ever be able to fill all required billets with prior service members, it must focus its retention efforts on both prior and non-prior service members.

D. SCOPE AND METHODOLOGY

This thesis is an extension of a prior Naval Postgraduate School Thesis by Joann Fifield titled "A Multivariate Analysis of Retirement Intentions of Enlisted Naval Reservists." This study focuses on how demographic and reserve characteristics and mobilization experiences influence career intentions of mobilized enlisted SELRES. The data for this thesis are from the 2002-2004 Naval Reserve Career Decision Survey which was provided by Michael A. White, of the Navy Personnel Research, Studies & Technology (NPRST) office in Millington, Tennessee.

E. ORGANIZATION OF STUDY

This thesis contains five chapters. Chapter I provides the introduction, background, and characteristics of the Navy Reserve compared to other reserve components and the civilian labor force. Chapter II presents a literature review of studies related to enlisted SELRES retention, impacts of mobilizations on reserves retention, impacts of operational tempo on active duty retention and prior service reserve affiliation. Additionally, this chapter provides insight into the methodology and variables selected for this thesis. Chapter III provides a

description of the data and describes the methodology used in the study and details of the model. Chapter IV contains the results of the estimated model. Chapter V provides a summary, recommendations and conclusions to assist the Navy in dealing with SELRES retention issues.

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II. LITERATURE REVIEW

A. OVERVIEW

This thesis analyzes the demographic and reserve characteristics and mobilization experiences that affect the self-reported career intentions of Navy Reservists who have been mobilized. The objective is to identify factors that affect retention in order to assist policy makers in modifying or developing reserve policies and programs to promote retention while meeting the increasing demands placed on the Navy Reserve. Previous studies have been conducted but none have specifically examined the demographic and reserve characteristics and the mobilization experiences of SELRES who have been mobilized. However, several studies have examined the effects of demographics and reserve/active-duty experiences on retention as well as on reserve affiliation. These studies provide valuable background information for conducting this thesis.

B. PRIOR STUDIES

1. SELRES Retention

In a previous study, Fifield (2006) examined the retirement intentions of enlisted SELRES utilizing 13,190 observations from the *2000-2001 Naval Reserve Career Decision Survey*. She used a multivariate logistic regression model to focus on the effects of demographics, military background characteristics, unit type, and reserve experiences on the stated intention to stay at least 20 years in the Navy Reserve. Of the 32 explanatory variables

utilized, 15 were statistically significant. "Marital status, pay grade, time-in-service and reserve experiences had the greatest effects on a respondent's intent to stay to retirement."(Fifield, 2006) Perceptions about the importance of training, accomplishment, recognition, family impact, civilian job impact, education benefits, leadership, career development, personal meaning and time spent working in a primary designator" were the reserve experiences that had a significant influence on stated career intentions. Finally, unit and rating type were not individually significant but were jointly significant in the model.

Of particular interest in the Fifield study is the simplification of the model through the aggregation of ratings and pay grades into groups. Instead of predicting the effects of individual ratings, she created eleven rating groups: seamanship, electronic equipment repair, craftsmen, medical, communications/intelligence, administrative/clerical, mechanical equipment repair (aviation), mechanical equipment repair (surface), service/supply, other and unrated. Furthermore, she did the same for pay groups: E1-E3, E4, E5, E6 and E7-E9.

Becker (2005) utilized the same survey as Fifield but instead of estimating a multivariate model she conducted chi-square tests of independence for 31,000 observations to assess the relationship of various demographic, unit-type, critical rate, and reserve experience variables to plans for retention to retirement eligibility. Although Becker included only enlisted SELRES in pay groups E1-E5 and E6, many of the independent variables that were significant

were the same as in Fifield's study. Those individuals in pay group E6 were the most likely to remain in the reserves until retirement. However, one notable difference in results is that males were significantly more likely to stay to retirement than females in Becker's study but did not have a significant effect in Fifield's study.

2. SELRES Retention and Mobilization

Kirby and Naftel (1998) examined the retention of enlisted reservists in the post Operation Desert Storm/Shield (ODS/S) period. They utilized data from the *1991 Guard/Reserve Survey of Officer and Enlisted Personnel* and the *Quarterly Master Personnel Files* from Defense Manpower Data Center (DMDC) to create a three year longitudinal study of 3,269 enlisted reservists with 4-12 years of service. Their objective was to examine the difference in retention between mobilized and non-mobilized enlisted reservists and the effects on retention of a mobilized reservist's work, family environment and economic position. (Kirby, et al.)

Results indicate that mobilization status has little effect on the probability of retention. (Kirby, et al) Pay grade does have a significant effect on retention and those in lower pay grades had a lower retention rate. Spousal attitude is also significant. The probability of retention was higher for non-mobilized reservists whose spouse had a favorable attitude than for mobilized reservists whose spouse had a favorable attitude. Conversely, reservists whose spouse had a negative attitude were less likely to reenlist.

Surprisingly, the highest probability of retention was among those that had supervisors with very unfavorable attitudes. Kirby and Naftel attribute these results, which differ from prior studies, to the length of time between reported attitude and the retention decision, a possible change in job or supervisor over the period studied, and the Navy's increased efforts in educating civilian employers about their legal obligations to SELRES. Also, slightly less than half of all mobilized reservists experienced some income loss. Finally, those who had increased family problems due to mobilization were less likely to reenlist than reservist who did not.

It is important to note that Kirby and Naftel realized that it is difficult to generalize the mobilizations of ODS/S to future mobilizations. ODS/S was a popular mobilization that garnered a great deal of support from employers and families. There were a lot of mobilizations but the duration of the war was relatively short. (Kirby, et al.) Future mobilizations will depend on the mission, length of the war and time SELRES are mobilized. Protracted wars and increased operational tempo can have adverse effects on a SELRES' family and employers which have been shown to be important factors in SELRES affiliation and retention in the reserves.

3. Active Duty Retention and OPTEMPO

Smith (2006) examined the retention of active duty Marine Corps aviators before and after 9/11. The goal of the study was to determine if the "increased operational tempo from the Global War on Terror has affected the retention behavior of Marine aviators."(Smith, 2006) "Prior

to 9/11, the Marine Corps deployment cycle consisted of six months deployed followed by eighteen months at home. Since 9/11 the deployment cycle consists of seven months deployed followed by seven months at home." (Smith, 2006) The mean retention rate for Marine aviators prior to 9/11 was 97% but after 9/11 it was only 66%. He conducted his study using three different multivariate regressions for each period (pre-9/11 and post 9/11). The first model evaluated the effects of number of deployments. The second evaluated the effects of hostile and non-hostile deployments. The third evaluated the combined effects of hostile and non-hostile deployments. The results indicate that those individuals who experienced multiple pre 9/11 hostile deployments were more likely to stay than those who didn't have any hostile deployments. However, in the post 9/11 period, all the models indicate that any combination of deployments, whether hostile or not, has a negative impact on the retention of Marine aviators. Smith concluded that it's not being deployed that is decreasing retention; rather declining retention appears to be explained by the increase in deployments or operational tempo.

Although increased operational tempo was the focus of Smith's study, it is important to note that the marital and active duty dependency variables were significant in determining retention. In the pre 9/11 model the only variable that was significant and positive on retention was the married with children variable. However, in the post 9/11 model, having any dependents, whether the service member was married or single was significant and increased retention.

Bristol (2006) utilized a difference-in-difference estimator to determine if increased operational tempo has had an effect on the retention of Navy Physicians. By utilizing the ***Officer Master File***, the ***Health Manpower Personnel Data System***, and the ***Individuals Pay File***, Bristol constructed separate retention behavior models for General Medical Officers (GMO) and specialists. For the GMO, the results indicated that being black, Hispanic, single with dependents and having an increased operational tempo were significant and reduced retention. However, being a member of a race/ethnic group other than white, black or Hispanic had a positive effect on retention.

For specialists, those who deployed after the OPTEMPO increased had a substantially higher probability of separation. (Bristol, 2006) Those individuals who deployed before the increased OPTEMPO and those who were single with no children had an increased probability of retention. Finally, for both models, as the years of service increases, so does the probability of retention.

Quester, et al. (2006) utilized a regression analysis to analyze how increasing deployment time affects a enlisted Marine's continuation in the Marine Corps. Their regression analyses of first-term enlisted Marines making decisions in Fiscal Year 2005 confirmed that deployments to crisis areas negatively affected reenlistment rates. Additionally, impacts on retention due to increased operational tempo were strongly affected by dependency status. For Marines with dependents, reenlistment rates were positively related to days deployed, and for Marines without dependents, reenlistment rates were negatively

related to days deployed. (Quester, et al.) Similar results were found for second and third-term Marines with and without dependents.

4. Reserve Affiliation

Utilizing data provided by the Defense Manpower Data Center, Waite (2005) analyzed the factors that influence first-term Naval Veterans (NAVETS) to affiliate with the SELRES. The multivariate logistic regression utilized data from Fiscal Years 1990 to 1994 and included 388, 637 first-term NAVETS who were eligible to affiliate with the SELRES. (Waite, 2005) The model also included rating groups to determine differences by occupational categories.

In addition to affiliation being highly dependent on Reserve pay and unemployment rates, the results also identify gender, race, marital status, dependents and age at the time of active separation as significant factors in a NAVET'S decision to affiliate. (Waite) A NAVET with a spouse or children has a lower probability of affiliating than someone without dependents. (Waite) Females have a higher probability of affiliation than males and blacks and Hispanics have a higher probability of affiliation than whites. The older a NAVET, the less likely he or she is to affiliate. (Waite) Finally, there were significant differences across rating groups. Those in the four technical rating groups were less likely to affiliate with the SELRES than those NAVETS in the medical, admin, seamanship and non-rates groups. Technical skills may to lead to increased civilian opportunities and a decreased probability of reserve affiliation.

C. SUMMARY

The findings in these studies provide an important foundation for determining the factors that influence an individual's career intentions. Many of the demographic and military experience variables such as marital and dependency status, years of service, pay grade and ethnicity/race were significant in explaining retention and evident across many of the studies. The goal of this thesis is to determine which factors impact SELRES career intentions for reservists who have been mobilized, and therefore it is important to recognize how increased operational tempo has affected the retention of active-duty personnel. Increased active-duty operational tempo can be expected to have an impact similar to that of mobilizations for the SELRES.

III. METHODOLOGY AND VARIABLE DESCRIPTION

A. DATA

1. Survey Description

Data utilized in this thesis were obtained from the *2002-2004 Naval Reserve Career Decision Survey*. In all, 5,518 mobilized enlisted personnel and officers of the Navy Reserve completed the Career Decision Survey. The survey was developed by Navy Personnel Research, Studies, and Technology (NPRST) in Millington, TN and Commander, Navy Reserve Force, as a tool to pinpoint demographics, reserve characteristics and mobilization experiences that influence mobilized SELRES career intentions.

The survey consisted of 16 demographic and 98 mobilization experience questions from five categories: General, Gaining Command, Pay and Benefits, Family, and Reserve Career. Most of the questions dealing with mobilization experiences asked the respondent to rate an aspect of mobilization on a seven-point Likert scale. One side of the scale (responses of 1 through 3) represented "influence to leave," the other side (responses 5 through 7) represented "influence to stay" and the center of the scale (a response of 4) indicated "no effect" on the respondent's Naval Reserve Career Intentions.

2. Data Organization

For the analysis in this thesis, the survey data were restricted to include only observations of enlisted SELRES. However, NPRST normally deletes any answers with less than 10 observations or attempts to combine them into like

groups, if possible, to guard the privacy of respondents. In order to maximize the sample size while maintaining respondents' privacy, NPRST effectively combined individual rates into rating groups to prevent the loss of observations. Table 6 displays the rating groups and the rates contained within each group. Appendix A provides the long title (detailed description) for each of the individual rates listed in Table 6.

Table 6. Rating Groups by Rate

Rating Group	Rates
Administration	DK,DM,JO,LI,LN,PH,PN,RP,YN
Aviation	ABE, ABF, ABH, AC, AD, AE, AG, AM, AME, AMH, AMS, AO, AS, AT, AW, AZ, PR
Cryptology	CTA, CTI, CTM, CTO, CTR, CTT, EW
Intelligence	IS
Medical/Dental	HM
Seabees	BU, CE, CM, EA, EO, SW, UT
Security	MA
Submarine	FT, MT, STS
Supply	AK SH SK MS PC
Surface CS	ET, FC, GM, MN, STG, TM
Surface Engineering	DC, EM, EN, GSE, GSM, HT, IC, MM, MR
Surface Ops	BM, IT, OS, QM, SM

Source: Author, derived from 2002-2004 Naval Reserve Career Decision Survey

Several additional reformatting changes were needed in creating this analysis data set. 'Years of Service' and 'Years SELRES' responses were converted from categorical to numeric measures by assigning the value of the midpoint to the lowest and highest categories. The responses of the 'Years of Service' and 'Years SELRES' questions that contained a response of < 1 year were converted to 0.5

years and the length of service group 25 to 30 years was converted to the average of the interval (27.5). All other responses corresponded to single years of service.

One of the goals of this study is to determine if there are differences in the effects of mobilization between reservists who have prior active-duty experience (NAVETS) versus those who do not. Although most new active-duty contracts are for at least four years, there have been some two and three year active-duty contracts over the last twenty years. For this reason, a reservist was considered to be prior enlisted if he or she had served at least three years on active duty. To accomplish this, Total Years as a SELRES was subtracted from Total Years of Service and if the difference was at least three, the individual was determined to be prior enlisted.

After the model was restricted to enlisted SELRES, observations that contained missing data for variables to be used in the analysis were deleted. There were 2,652 enlisted SELRES observations remaining for use in this study.

B. CHARACTERISTICS

Tables 7 through 9 provide a description of the enlisted SELRES contained in the analysis sample. These percentage distributions and descriptive statistics for demographic characteristics, reserve characteristics and mobilization experience variables are intended to provide insight into the characteristics of a typical mobilized enlisted SELRES member in the 2002-2004 data set.

1. Demographic Characteristics

Table 7. Demographic Characteristics

Characteristic	Percent
Gender	
MALE	83.3
FEMALE	16.67
Family Status	
MWC (married with children)	52.38
MNC (married no children)	17.84
SWC (single with children)	8.14
SNC (single no children)	21.64
Race/Ethnicity	
HISP (Hispanic)	10.82
WHITE (Caucasian)	71.46
BLACK (Black/African American)	10.97
ASIAN (Asian/Pacific Islander)	4.11
NATAM (Native American/Eskimo)	0.68
OTHER_RACE	1.96

Source: Author, derived from 2002-2004 Naval Reserve Career Decision Survey

Table 7 provides a description of demographic characteristics of mobilized SELRES. The percentage of Mobilized male SELRES in the survey data is five percentage points higher than the percentage of males in the Navy Reserve SELRES population.[9] In other words, males account for about 78.4 percent of all enlisted Navy SELRES compared to the 83.3 percent of mobilized male SELRES observed in the data used for this analysis. Also, the percentage of mobilized SELRES in the survey data who are married is 23 percentage points higher (70%) than the percent married for the aggregate of all reserve component SELRES (47%). About 60 percent of the surveyed SELRES have children under the

[9] Office of Under Secretary of Defense, Personnel and Readiness. (2004).

age of 21. Almost 72 percent of the survey respondents are white, while the proportion Hispanic and the proportion Black are about the same at nearly 11 percent. The percentage of African Americans among mobilized enlisted reservists is 8 percentage points lower than in the total population of Navy SELRES.

2. Reserve Characteristics

Table 8. Reserve Characteristics

Characteristic	percent or mean
Paygrade	
JUNIOR (E1-E4)	17.2
MIDGRADE5 (E5)	37.93
MIDGRADE6 (E6)	31.9
SENIOR (E7-E9)	12.97
Length of Service	
YRS_SER (total years service) (mean)	13 years 2 months
Total years SELRES (mean)	8 years 5 months
Prior Service	
PRIOR (prior active-duty service)	69.98
NON-PRIOR (no prior active-duty serv)	30.02
Rate Groups	
ADMIN (Administration)	9.01
AVIAT (Aviation)	10.41
CRYPTO (Cryptology)	2.26
INTEL (Intelligence)	4.90
MEDICAL (Medical/Dental)	5.54
BEES (Seabees)	9.54
SECUR (Security)	8.75
SUBS (Submarine)	0.49
SUPPLY	10.56
SURFCS (Surface Combat Systems)	11.27
SURFENG (Surface Eng)	10.07
SURFOPS (Surface Ops)	17.19
Type Unit Serving	
AIR	26.21
RESERVE CENTER	73.27
SHIP	0.53

Source: Author, derived from 2002-2004 Naval Reserve Career Decision Survey

Table 8 provides a description of the reserve background characteristics of the mobilized SELRES respondents in the survey. Approximately 70 percent of mobilized SELRES are prior active-duty, which is comparable to all Navy SELRES. Paygrade for mobilized reservists appears to mirror the paygrade distribution for the Navy SELRES as a whole. There are more E-5s and E-6s than junior enlisted (E1-E4) and senior (E-7-E9) enlisted personnel.

3. Mobilization Experiences

Table 9. General Mobilization Characteristics

Experiences	Percent
Mobilized (Before)	
Never mobilized before	86.01
PRIORMOB1 (mob once before)	12.07
Twice before	1.47
More than twice before	0.45
Volunteered for Mobilization	
Non-volunteer	78.21
Volunteer	21.79
Currently Mobilized (active)	
Not currently mobilized	13.57
Currently mobilized	86.43
Duration of Orders	
MOBORDERS1_11 (less than 12 months)	4.94
12 months or greater	95.06

Source: Author, derived from 2002-2004 Naval Reserve Career Decision Survey

Table 9 provides descriptive statistics on general mobilization background characteristics. Approximately 86 percent in the survey had never been mobilized before and only 21 percent of SELRES volunteered for their current

mobilization. About 86 percent were mobilized at the time they completed the survey. Furthermore, 95 percent of the mobilization orders were written for at least 12 months.

C. VARIABLE SELECTION

1. Dependent Variable: Retirement Intent

The dependent variable, Retire, is a binary variable that indicates a respondent's career intention to stay in the Reserves for a career. Although not explicit, in general when a service member discusses the military as a "career" he or she is referring to staying in the reserves until an individual has completed at least 20 years of qualifying service and is eligible for retirement. The survey question asked "How has the mobilization experience affected your career intentions?" There were three response choices: "influenced me to stay in the Reserves;" "had no effect on my decision"; and "influenced me to leave the Reserves sooner than I had planned." For analysis, these responses were used to construct a binary dependent variable, with "Stay to retire" equal to 1 if the respondent answered that the mobilization experience either had no effect or was an influence to stay in the Reserves to retirement and equal to 0 otherwise. Of the 2,652 respondents, 68.78% reported that they were influenced to stay to retirement while 31.22% were influenced to leave sooner than planned.

Because the definition of the dependent variable is somewhat arbitrary, for comparison purposes, a second model was estimated, by removing all respondent observations that perceived the current mobilization to have "no effect" on their career intentions. Appendix A provides the results

of this comparison model and a description of the differences in results between the model discussed in the text and the comparison model. In general, the results between the two alternative models are similar.

2. Explanatory Variables

The explanatory variables selected for the analysis in this thesis were responses to questions included in the *Navy Reserve Career Decision Survey*. Variable selection was based on the literature review and on the author's personal experience as the Commanding Officer of a Naval Reserve Center that mobilized over 100 enlisted SELRES. The survey questionnaire items are divided into three major categories: *Demographic Characteristics; Reserve Characteristics* and *Mobilization Experiences*. *Mobilization Experiences* consisted of four sub-categories: *General; Gaining Command; Pay and Benefits;* and *Your Family*. The *Your Family* subgroup variables were not included in the analysis because they did not apply to single reservists without children. All explanatory variables are binary with the exception of Total Years Service (YRS_SER) and Total Years SELRES (YRS_SEL), which are continuous. Many of the Mobilization Characteristic variables were constructed from a "Likert Scale" with 1, 2, and 3 indicating an "influence to leave," 4 having "no effect" and 5, 6 and 7 indicating an "influence to stay." For example, this is how the variable CIVJOB was constructed. The question asked "The effect this mobilization has had on your civilian job." If the individual answered with 1, 2 or 3 (base case) then this mobilization factor influenced an individual to leave before completing 20 years of qualifying service. If the

individual answered 4, 5, 6, or 7 then the mobilization experience factor is thought not to be adverse and either had "no effect" or a "positive influence" on an individual's intention to stay to retirement.

D. PRELIMINARY ANALYSIS

Utilizing Chi-Square tests of contingency tables and two-sample t-tests of differences in means, a preliminary analysis of the data was conducted for the 2,652 mobilized enlisted SELRES sample. The Chi-Square test determines the strength of the relationship between each explanatory (independent) categorical variable and the dependent variable, stay to retire. The null hypothesis states that the two variables are not related to each other. The alternative hypothesis is that the two variables share a relationship and are not independent of each other. The T-test determines if there is a difference in the mean of the explanatory variable, total years of service and total years of SELRES, for individuals who were influenced to stay to retirement and those who were not influenced to stay to retirement. Tables 10-12 display the Chi-Square and t-test results as well as the variation in influence to stay to retirement by each explanatory variable for the survey data.

Not a single demographic characteristic in Table 10 was significant at any of the usual levels. However, race/ethnicity was extremely close to being significant at the .10 level. Other Race had the lowest percentage of all race/ethnicity groups of those individuals that intended to

stay to retirement. The percentage who were influenced to stay to retirement varied only slightly by Gender and Family Status.

Table 10. Chi-Square Test Results: "Stay to Retire" by Demographic Characteristics (number and percent)

Demographics	Stay to Retire	LV before Retire
Gender		
Male	1518 (68.69%)	692 (31.31%)
Female	306 (69.23%)	136 (30.77%)
Family Status		
Married with children (MWC)	957 (68.90%)	432 (31.10%)
Married no children (MNC)	335 (70.82%)	138 (29.18%)
Single with children (SWC)	145 (67.13%)	71 (32.87%)
Single no children (SNC)	387 (67.42%)	187 (32.58%)
Race/Ethnicity		
Hispanic	190 (66.20%)	97 (33.80%)
White	1295 (68.34%)	600 (31.66%)
Black/African American	212 (72.85%)	79 (27.15%)
Asian/Pacific Islander	83 (76.15%)	26 (23.85%)
Native American/Eskimo	13 (72.22%)	5 (27.78%)
Other Race	31 (59.62%)	21 (40.38%)

Note: None of the chi-square statistics were significant at any of the usual levels
Source: Author, derived from 2002-2004 Naval Reserve Career Decision Survey

Table 11 displays the variation in intention to stay to retirement by reserve characteristics. Influence to stay to retirement varied significantly by Pay group and Rating Group. Individuals in the Senior (E7-E9) pay group have the greatest percentage of individuals that intend to stay to retirement. Individuals in this pay group typically have the greatest amount of years invested among enlisted SELRES and seek to gain a return on their investment by staying to retirement. On the contrary, the pay group with the smallest percentage who intend to stay to retirement is the Junior pay group. These individuals have less time invested and may not desire to capitalize on their investment by staying to retirement. Those individuals who were influenced to stay to retirement had more years of Total Service (13.76 yrs) compared to those who were influenced to leave (12.04 yrs). Similarly, individuals who were influenced to stay to retirement had more years SELRES (8.9 yrs) compared to individuals who were influenced to leave prior to retirement (7.2 yrs). There appears to be very little difference in intended behavior between enlisted who have prior-active duty experience and those SLERES that do not have prior-active duty service. Furthermore, individuals in the Cryptology and Security rate groups are less likely to be influenced to stay to retirement than those in other rate groups.

Table 11. Chi-Square Test Results and T-test results: "Stay to Retire" by Reserve Characteristics (number and percent)

Reserve Characteristics	Stay to Retire	LV before Retire
Pay group/Paygrade ***		
Junior (E1-E4)	272 (59.65%)	184 (49.35%)
Midgrade5 (E5)	682 (67.79%)	324 (32.21%)
Midgrade6 (E6)	598 (70.69%)	248 (29.31%)
Senior (E7-E9)	344 (82.69%)	72 (17.31%)
Total years service +++	13.7 yrs	12.04 yrs
Total years SELRES +++	8.9 yrs	7.2 yrs
Prior active-duty service		
PRIOR	1332 (68.31%)	618 (31.69%)
Non-Prior	492 (70.09%)	382 (29.91%)
Rate Groups ***		
Administration	174 (72.80%)	65 (27.20%)
Aviation	170 (61.59%)	106 (38.41%)
Cryptology	32 (53.33%)	28 (46.67%)
Intelligence	96 (73.85%)	34 (26.15%)
Medical/Dental	97 (65.99%)	50 (34.01%)
Seabees	173 (68.38%)	80 (31.62%)
Security	127 (54.74%)	105 (45.26%)
Submarine	8 (61.54%)	5 (38.46%)
Supply	224 (80.00%)	56 (20.00%)
Surface Combat Systems	208 (69.57%)	91 (30.43%)
Surface Engineering	190 (71.16%)	77 (28.84%)

Reserve Characteristics	Stay to Retire	LV before Retire
Surface Operations	325 (71.27%)	131 (28.73%)
Type Unit Serving		
Air	471 (67.77%)	224 (32.23%)
Reserve Center	1342 (69.07%)	601 (30.93%)
Ship	11 (78.57%)	3 (21.43%)

*** Chi-Square statistic significant at the .01 level
+++ T-statistic for difference in means significant at the .01 level
Source: Author, derived from 2002-2004 Naval Reserve Career Decision Survey

Table 12 displays the variation in intention to stay to retirement by General Mobilization Experiences. Prior mobilization was significantly associated with influence to stay to retirement. As the number of prior mobilizations increased so did influence to stay. Although 12 respondents had been mobilized at least twice before, 91% percent of them were influenced to stay in the reserves. It is possible that these individuals enjoy the opportunity to utilize their skills during a mobilization and/or may have many years invested in the Reserves. Of the approximately 22% of respondents who were volunteers, nearly 82% were influenced to stay. Of the 78% of respondents who were non-volunteers, only 65% were influenced to stay. Of the nearly 64% who felt that time to report was a positive influence in their retirement decision, 22% were influenced to leave prior to retirement. About 68% of respondents believe that impact on civilian job positively influenced their retirement decision. Although 95% had orders written for at least a year, the percentage whose retirement decision was positively influenced was nearly identical to those who had orders written for less than a year. Nearly

83% of all respondents felt that they were informed "a little" to "no extent on the rules of delaying their mobilization. Finally, 75% believe that the treatment they received at the Navy Mobilization Processing Site influenced their decision and about 26% of those individuals intend to leave before retirement.

Table 12. Chi-Square Test Results: "Stay to Retire" by Mobilization (General) Experiences (number and percent)

Mob (General)	Stay to Retire	LV before Retire
PRIORMOB ***		
Never mobilized before	1532 (67.16%)	749 (32.84%)
Once before	247 (77.19%)	73 (22.81%)
Twice before	34 (87.18%)	5 (12.82%)
More than twice before	11 (91.67%)	1 (8.33%)
Volunteered for Mobilization ***		
Non-volunteer	1353 (65.24%)	721 (34.76%)
Volunteer	471 (81.49%)	107 (18.51%)
CURRMOB **		
Not currently mobilized	268 (74.44%)	92 (25.56%)
Currently mobilized	1556 (67.89%)	736 (32.11%)
MOBORDERS		
Less than 12 months	91 (69.47%)	40 (30.53%)
12 months or greater	1733 (68.74%)	788 (31.26%)
Report_Time ***		
Influence	1318 (77.90%)	374 (22.10%)
Not Influence	506 (52.71%)	454 (47.29%)

Mob (General)	Stay to Retire	LV before Retire
CIVJOB ***		
Influence	1418 (78.34)	392 (21.66%)
Not Influence	406 (48.22%)	436 (51.78%)
NMPS ***		
Influence	1477 (74.48%)	506 (25.52%)
Not Influence	437 (52.87%)	322 (48.13%)
DELAY ***		
Informed to some extent	390 (85.53%)	66 (14.47%)
Informed a little to no Extent	1434 (65.30%)	762 (34.70%)

*** Significant at the .01 level ** Significant at the .05 level
Source: Author, derived from 2002-2004 Naval Reserve Career Decision Survey

Table 13 displays the variation in intention to stay to retirement by Gaining Command Mobilization Experiences. About 76% of respondents whose Gaining Command was the same or close (in proximity) to their drill site were influenced to stay in the reserves until retirement. Of the 32% who perceived their mobilization as not being interesting, 54% intend to leave before retirement. Of the 29% who perceived that the responsibility level during mobilization was not related to their rank, 44% intended to leave prior to retirement. Finally, of the 53% who perceived that the leadership at the gaining command influenced their decision, 86% intend to stay to retirement.

Table 13. Chi-Square Test Results: "Stay to Retire" by Mobilization Experiences, Gaining Command (number and percent)

Mob (Gaining Command)	Stay to Retire	LV before Retire
GAINCMD ***		
Same or close to drill site	771 (75.51%)	250 (24.49%)
Quite far from drill site	1053 (64.56%)	578 (35.44%)
INTRSTNG ***		
Interesting	1438 (79.71%)	366 (20.29%)
Not Interesting	386 (45.52%)	462 (54.48%)
RANKREL ***		
Responsibility related to rank	1243 (76.68%)	376 (23.22%)
Responsibility not related to rank	581 (56.24%)	452 (43.76%)
CMDLDRSHP ***		
Influence	1073 (85.98%)	175 (14.02%)
Not influence	751 (53.49%)	653 (46.51%)

*** Significant at the .01 level ** Significant at the .05 level
Source: Author, derived from 2002-2004 Naval Reserve Career Decision Survey

Table 14 displays the variation in intention to stay to retirement by Pay and Benefit Mobilization Experiences. All Pay and Benefit Mobilization explanatory variables heavily influenced the respondents' retirement decisions. In fact, of those that felt it influenced their decision, over 70% (for each variable) intended to stay to retirement.

Table 14. Chi-Square Test Results: "Stay to Retire" by Mobilization Experiences Pay and Benefits (number and percent)

Mob (Pay and Benefits)	Stay to Retire	LV before Retire
PAYDIFF ***		
Influence	1311 (77.39%)	383 (22.61%)
Not Influence	513 (53.55%)	445 (46.45%)
CMSARY ***		
Influence	1733 (70.56%)	723 (29.44%)
Not Influence	91 (46.43%)	105 (53.57%)
MEDCARE ***		
Influence	1592 (72.89%)	592 (27.11%)
Not Influence	232 (49.57%)	236 (50.43%)
DENTCARE ***		
Influence	1606 (71.82%)	630 (28.18%)
Not Influence	218 (52.40%)	198 (47.60%)
EDBNFT ***		
Influence	1666 (71.81%)	654 (28.19%
Not Influence	158 (47.59%)	174 (52.41%)

*** Significant at the .01 level ** Significant at the .05 level
Source: Author, derived from 2002-2004 Naval Reserve Career Decision Survey

E. ANALYTICAL METHOD

1. Theoretical Model

Multivariate logistic regression was utilized for this analysis. This is the preferred method for estimating a model that has a discreet (dichotomous) dependent variable that is bounded between zero and one. The logistic

regression calculates the log of the odds to ensure the upper and lower bounds of the dependent variable are not violated. The theoretical model is:

$$L_i = \ln [P_i/(1- P_i)] = \alpha + \beta x_i$$

where:

L_i= The log of the odds ratio

P_i= The probability an individual stays given personal attributes x_i

α= The intercept

β= Estimated coefficients of the explanatory variables

x_i= Values of explanatory variables in the model

2. Model Specification

The model estimated for this analysis is shown below. Also, each variable and its expected effect is presented in the next section (Section E paragraph 3) of this chapter.

$$\ln [P_i/(1- P_i)] = \beta_0 + \beta_1(\text{FEMALE}) + \beta_2(\text{MWC}) + \beta_3(\text{MNC}) + \beta_4(\text{SWC}) + \beta_5(\text{HISP}) + \beta_6(\text{BLACK}) + \beta_7(\text{ASIAN}) + \beta_8(\text{NATAM}) + \beta_9(\text{OTHER\_RACE}) + \beta_{10}(\text{MIDGRADE5}) + \beta_{11}(\text{MIDGRADE6}) + \beta_{12}(\text{SENIOR}) + \beta_{13}(\text{YRS\_SERV}) + \beta_{14}(\text{YRS\_SELRES}) + \beta_{15}(\text{PRIOR}) + \beta_{16}(\text{AVIAT}) + \beta_{17}(\text{CRYPTO}) + \beta_{18}(\text{INTEL}) + \beta_{19}(\text{MEDICAL}) + \beta_{20}(\text{BEES}) + \beta_{21}(\text{SECUR}) + \beta_{22}(\text{SUBS}) + \beta_{23}(\text{SUPPLY}) + \beta_{24}(\text{SURFCS}) + \beta_{25}(\text{SURFENG}) + \beta_{26}(\text{SURFOPS}) + \beta_{27}(\text{AIR}) + \beta_{28}(\text{SHIP}) + \beta_{29}(\text{PRIORMOB1}) + \beta_{30}(\text{PRIORMOB2}) + \beta_{31}(\text{VLNTR}) + \beta_{32}(\text{CURRMOB}) + \beta_{33}(\text{ORDERS1\_11}) + \beta_{34}(\text{REPORT\_TIME}) + \beta_{35}(\text{CIVJOB}) + \beta_{36}(\text{NMPS}) + \beta_{37}(\text{DELAY}) + \beta_{38}(\text{GAINCMD}) + \beta_{39}(\text{INTRSTNG}) + \beta_{40}(\text{RANKREL}) + \beta_{41}(\text{CMDLDRSHP}) + \beta_{42}(\text{PAYDIFF}) + \beta_{43}(\text{CMSARY}) + \beta_{44}(\text{MEDCARE}) + \beta_{45}(\text{DENTCARE}) + \beta_{46}(\text{EDNBNFT})$$

3. Hypothesized Effects of Variables

This section states hypotheses about the effects of the explanatory variable on the dependent variable, intention to stay to retirement. These hypotheses are based on the literature review. Table 15 provides a summary of the expected effects of the explanatory variables on the dependent variable (RETIRE).

a. Demographic Characteristics

It is hypothesized that females will have a lower propensity to stay to retirement compared to males due to the difficulty of balancing a career in the reserves with family obligations, especially with the possibility of increased mobilizations. Additionally, those individuals with family members (MWC, MNC SWC) are expected to be more likely to stay to retirement than respondents who are single without family members (SNC). Reserve duty offers a second income (i.e., a part time job) and for SELRES with family members it provides another opportunity to meet the additional obligations encountered by a SELRES with family members.

It is anticipated that the signs of the minority race/ethnicity variables compared to the base case of whites are likely to be positive due to the belief that the military is perceived to provide more equitable professional and promotion opportunities than may be afforded to minorities in the civilian sector.

b. Reserve Characteristics

Those in higher paygrades (MIDGRADE5, MIDGRADE6, SENIOR) compared to lower paygrades (JUNIOR), those with more years of total years (YRS_SERV) of service, those with more total years SELRES (YRS_SELRES), and PRIOR (active-duty enlisted) are expected to be more likely to be influenced to stay to retirement in order to realize a return on their effort in achieving higher rank, time spent in the reserves and time and time spent on active duty.

Every SELRES community (occupational grouping) offers its advantages and disadvantages. Compared to the Administrative community (ADMIN), which perform paperwork duty in a pleasant working environments, the other communities, which often work in diverse but not as pleasant working environments are expected to be less likely to stay to retirement.

Most SELRES drill at a Reserve Center which is normally located in close proximity to a respondent's home. Taking into consideration previous studies it is hypothesized that air and ship units will have a negative influence on an individual staying to retirement when compared to being attached to a unit at a reserve center due to the arduous nature and the traveled required to these air and ship units compared to the units that drill at the reserve center.

c. Mobilization Experiences

(1) General. It is hypothesized that having a history of previous mobilizations will have a negative influence on an enlisted SELRES staying to

retirement when compared to the base case of never been mobilized before. The coefficients of PRIORMOB1 (one previous mobilization) and PRIORMOB2 (two or more previous mobilizations) are expected to have negative signs. The more often a person has been mobilized the more negatively impacted his or her personal and civilian life is likely to be. A person currently mobilized (CURRMOB) is more likely to remember the negative features of the mobilization than someone who responds to the survey after completing mobilization. After mobilization, most individuals are glad to get back to their normal civilian routine and are likely to concentrate on the positive aspects of the mobilization experience rather than the negatives.

During the beginning of the GWOT mobilizations, very little time was given to report for mobilization (REPORT_TIME). For some, it was less than 72 hours from notification to reporting time. The short notifications created challenges for these individuals but most were aware and informally notified of the increased possibility of mobilization. It is hypothesized that those individuals who were satisfied with the amount of time they were given to report would consider reporting time (REPORT_TIME) to be a positive influence and would be more likely to intend to stay to retirement. Therefore, the variable REPORT_TIME is expected to have a positive influence on an individual's intent to stay to retirement.

If an individual perceived the effect this mobilization has had on his or her civilian job as a positive experience then it is expected that that it should also positively influence the intent to stay to

'retirement.' Sometimes a change of pace, such as a mobilization, can rejuvenate an individual, and may motivate them when they return. If a respondent perceived their experience at the Navy Mobilization Processing Site (NMPS) to be positive, then it is expected that this should also positively influence an individual's intent to stay to retirement. If an individual volunteered, he or she desired to be mobilized and this should have a positive influence on plans to stay to retirement. Thus, the variable VLNTR is expected to have a positive sign. Also, it seems likely that those who were on mobilization orders for less than 12 months would be more strongly influenced to stay to retirement than individuals who had orders for 12 months or longer. The shorter the mobilization, the quicker an individual can get back to his or her civilian job, family and personal life. Finally, although most SELRES didn't require a reporting delay, just knowing that there is a policy/procedure available if needed should have a positive influence on a mobilized enlisted SELRES member's intent to stay in the Navy Reserve until retirement.

(2) Gaining Command. It is hypothesized that all gaining command variables will have a positive effect on an individual staying to retirement. If an individual's mobilization site was the same or close to the gaining command (GAINCMD), then the mobilized SELRES member is likely to be either familiar with the organization or the area and may feel more comfortable than the individual who is not mobilized to the same geographical area as the drill site. If an enlisted reservist felt that the mobilization involved tasks that were interesting

(INTRSTNG), or felt that the responsibility associated with the mobilization was related to his or her rank (RANKREL) then he or she is likely to feel that he or she was a good choice for that position and will be more likely to plan to stay to retirement as the result of mobilization than someone who is not positive about these aspects of the mobilization experience. Finally, leadership at the gaining command greatly influences the command's morale and is an important element in meeting their mission. Especially with the augmentation of reserves into active components, command leadership is important in meeting the challenges faced by SELRES during mobilization. Command leadership (CMDLDRSHP) at the gaining command is an important factor and is expected to have a positive influence on an individual's intent to stay to retirement.

(3) Pay and Benefits. It is hypothesized that all pay and benefit mobilization variables will positively influence an individual to stay to retirement. The military has benefits that are generally recognized as outstanding when compared to civilian organizations. With tax advantages such as Basic Allowance for Housing (BAH), Commuted Rations (COMRATS), and tax-free zones, the military compensation is comparable to civilian compensation for most enlisted SELRES. The military offers low co-payments for medical and dental coverage. The variable PAYDIFF indicates whether or not the difference between amount of civilian pay that would have been earned and military pay received during mobilization was an influence to stay. Those who did not suffer a decrease in pay are expected to answer affirmatively and, in turn, to be more likely to plan to stay to retirement than those who

experienced a decrease in pay. Medical care (MEDCARE) and dental care (DENTCARE) received while mobilized are expected to show a similarly positive relationship to the dependent variable. Due to the savings offered at the commissary compared to civilian supermarkets, it is expected that the use of the commissary (CMSARY) will influence an individual to stay to retirement. Finally, because the Navy is extremely dedicated to providing educational opportunities for its enlisted sailors, it is hypothesized that educational benefits (EDBNFT) will have a positive influence on an individual's intention to stay to retirement.

Table 15. Explanatory Variables and Expected Signs

Variable Name	Variable Type	Expected Sign
Demographic Characteristics		
Gender	Dichotomous	
Female		-
Family Status	Dichotomous	
Married with children (MWC)		+
Married no children (MNC)		+
Single with children (SWC)		+
Single no children (SNC)		Base Case
Race/Ethnicity	Dichotomous	
Hispanic (HISP)		+
White		Base Case
Black/African American (BLACK)		+
Asian/Pacific Islander (ASIAN)		+
Native American/Eskimo (NATAM)		+
Other Race (OTHER_RACE)		+
Reserve Characteristics		
Pay group/Paygrade	Dichotomous	
Junior (E1-E4)		Base Case
Midgrade5 (E-5)		+
Midgrade6 (E-6)		+
Senior (E7-E9)		+

Variable Name	Variable Type	Expected Sign
Total years service	Continuous	+
Total years SELRES	Continuous	+
Prior (active-duty service)	Dichotomous	+
Rate Groups	Dichotomous	
Administration (ADMIN)		Base Case
Aviation (AVIAT)		-
Cryptology (CRYPTO)		-
Intelligence (INTEL)		-
Medical/Dental (MEDICAL)		-
Seabees (BEES)		-
Security (SECUR)		-
Submarine (SUBS)		-
Supply (SUPPLY)		-
Surface Combat Sys (SURFCS)		-
Surface Eng (SURFENG)		-
Surface Ops SURFOPS)		-
Type Unit Serving	Dichotomous	-
Air		-
Reserve Center		Base Case
Ship		-
Mob (General)		
PRIORMOB	Dichotomous	
Never mobilized before		Base Case
Once before (Priormob1)		-
Twice or more (priormob2)		-
Volunteered (for Mob)	Dichotomous	+
CURRMOB (currently mobilized)	Dichotomous	-
MOBORDERS (< 12 months)	Dichotomous	+
Report_Time	Dichotomous	+
CIVJOB	Dichotomous	+
NMPS	Dichotomous	+
DELAY (inform to some extent)	Dichotomous	+
Mob (Gaining Command)		
GAINCMD (same/close to drill)	Dichotomous	+
INTRSTNG	Dichotomous	+
RANKREL	Dichotomous	+
CMDLDRSHP	Dichotomous	+
Mob (Pay and Benefits)		
PAYDIFF	Dichotomous	+
CMSARY	Dichotomous	+
MEDCARE	Dichotomous	+
DENTCARE	Dichotomous	+
EDBNFT	Dichotomous	+

Source: Author, derived from survey data

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IV. RESULTS OF MULTIVARIATE MODEL ESTIMATION

A. INTRODUCTION

This chapter examines the results of the logistic regression model. The model predicts the effects of demographics, reserve characteristics, and mobilization experiences on the intent of a mobilized enlisted SELRES member's intent to stay in the reserves until retirement. The chapter discusses the model fit, interpretation of the coefficients, a restricted model test, joint significance tests for subgroups and partial effects.

B. RESULTS OF ENLISTED RETIRE MODEL

1. Model Fit

a. Global Null Hypothesis

There were three different criteria utilized to determine the goodness of fit of the model. The first criterion utilized to determine model fit was the Global Null Hypothesis. The Global Null Hypothesis states that none of the variables in the model has an effect on the dependent variable 'retire.' The alternative hypothesis states that at least one of the variables has a significant effect on the variation in the dependent variable. The decision to accept the Global Null Hypothesis or to reject it is made utilizing the Log Likelihood Ratio and the associated Chi-Square probability. Table 16 displays the results for the model. The probability value is <.0001 which means that there is sufficient evidence to reject the

null hypothesis and accept the alternative hypothesis that there is at least one explanatory variable that has a significant effect on the dependent variable 'retire.'

Table 16. Global Null Hypothesis for "Stay to Retire" Model

Likelihood Ratio (Chi-Square)	846.0224
Degrees of Freedom (DF)	46
PR > Chi-Square	<.0001 ***

*** Significant at the .01 level
Source: Author, derived from survey data

b. R-Square

The next 'goodness of fit' measure was the Max-rescaled R-Square. The Max R-rescaled R-Square in logistic regression is utilized to determine the strength of the association in the model. The Max-rescaled R-square for this model is .3839. This indicates that approximately 38% of the variation in the dependent variable 'retire' is related to the variation in the explanatory variables.

c. Classification Table

The final criterion utilized to determine the model's goodness of fit was the classification table. This method determines the accuracy of the model's predictions by comparing predicted and actual outcomes. Table 17 displays the classification table results for the model. The probability cut-off for assigning observations to categories of the dependent variables was determined by dividing the number of mobilized enlisted SELRES members who intended to 'stay to retirement' (1,828) by the total number of respondents (2,652) yielding a probability of

0.6892. When this value is used in constructing the classification table, 73.32 percent of the respondents are correctly classified. The "sensitivity" measure indicates that 73.8 percent of mobilized enlisted SELRES who intend to stay to retirement are correctly classified. Finally, the "specificity" indicates that 71.8 percent of those respondents that intend to leave before retirement are accurately classified.

Table 17. Classification Table Results for the "Stay to Retire" model

	Correct		Incorrect			Percentages			
Prob Level	Event	Non-Event	Event	Non-Event	Correct	Sensi-tivity	Speci-ficity	False Pos	False Neg
0.680	1347	595	234	477	73.2	73.8	71.8	14.8	44.5

Source: Author, derived from survey data

2. Interpretation and Evaluation of Coefficients

Overall, 22 of the 46 explanatory variables utilized in the model were significant: 11 at the 0.01 level, 4 at the 0.05 percent level and 7 at the 0.10 level. The logistic regression results for the 'stay-to-retire' model are displayed in Table 18. One-tail tests of significance were utilized for all variables.

One challenge with attempting to create a model for this survey data is the problem of multi-collinearity. Although many variables such as Senior, YRS_SELRES and PRIOR are not significant at the usual levels, this does not necessarily indicate that they are not important and should be excluded. These variables are all highly correlated with each other. A more senior member is

probably prior enlisted and has served many years as a SELRES. So, for such a large model, although it is possible to reduce collinearity, it is difficult to eliminate it while still developing a model that seeks to give the best possible predictions.

Table 18. Logistic Regression Results for 'Stay to Retire' Model (n = 2,652)

Variable Name	Coefficient	PR>Chi-SQ
Demographic Characteristics		
Gender		
FEMALE	-0.0982	0.2542
FAMILY STATUS		
MWC (married with children)	-0.0514	0.3489
MNC (married no children)	0.0961	0.2804
SWC (single with children)	-0.1857	0.1862
RACE_ETHNICITY		
HISP (Hispanic)	0.1123	0.2511
BLACK (Black/African American)	0.3076**	0.0399
ASIAN (Asian/Pacific Islander)	0.3612*	0.0979
NATAM (Native American/Eskimo)	0.0154	0.4894
OTHER_RACE (Other Race)	-0.2516	0.2317
Reserve Characteristics		
Pay group/Paygrade		
MIDGRADE5 (E-5)	0.2496*	0.0510
MIDGRADE6 (E-6)	0.2355*	0.0990
SENIOR (E7-E9)	-0.1889	0.2221
YRS_SERV (total years service)	0.0257*	0.0970
YRS_SELRES (total years SELRES)	0.0143	0.2117
PRIOR (active-duty service)	-0.0217	0.4503
RATE_GROUPS		
AVIAT (Aviation)	-0.0336	0.8927
CRYPTO (Cryptology)	-1.2034***	0.0004
INTEL (Intelligence)	-0.0253	0.4676
MEDICAL (Medical/Dental)	-0.5282**	0.0312
BEES (Seabees)	-0.0207**	0.4673
SECUR (Security)	-0.0340	0.4463
SUBS (Submarine)	-0.8680	0.1084
SUPPLY	0.3860*	0.0639
SURFCS (Surface Combat Systems)	0.0798	0.3722
SURFENG (Surface Eng)	0.2135	0.1964

Variable Name	Coefficient	PR>Chi-SQ
Demographic Characteristics		
SURFOPS (Surface Ops)	-0.0303	0.4465
TYPE UNIT SERVING		
AIR	0.0624	0.3121
SHIP	0.7052	0.1746
Mob (General)		
PRIORMOB		
PRIORMOB1 (mob once before)	0.2951**	0.0393
PRIORMOB2 (mob twice or more)	1.4486***	0.0017
VLNTR (volunteered for mob)	0.3277**	0.0103
CURRMOB (currently mobilized)	-0.2409*	0.0591
MOBORDERS (< 12 months)	-0.0395	0.4359
REPORT_TIME	0.5464***	0.0001
CIVJOB	0.7888***	0.0001
NMPS	0.3682***	0.0006
DELAY (inform to some extent)	0.4518***	0.0027
Mob (Gaining Command)		
GAINCMD (same/close to drill)	0.2897***	0.0043
INTRSTNG	0.9180***	0.0001
RANKREL	0.1778*	0.0534
CMDLDRSHP	1.0682***	0.0001
Mob (Pay and Benefits)		
PAYDIFF	0.4963***	0.0001
CMSARY	-0.0155	0.4688
MEDCARE	0.2056	0.1279
DENTCARE	0.0157	0.4671
EDBNFT	0.2857**	0.0345

*** Significant at the .01 level ** Significant at the .05 level
* Significant at the 0.10 level
Source: Author, derived from survey data

a. Demographic Characteristics

Only 2 of 9 demographic variables are significant in the model. The race/ethnicity variables BLACK and ASIAN are the only demographic characteristics that are significant.

The variable FEMALE is not significant in the model. This result does not support the hypothesis that females have a lower propensity than males to 'stay to

retirement' due to them finding it difficult to balance a career in the reserves with family obligations. It is possible that with many families requiring dual-incomes the responsibilities of men and women reservists are more similar now than in the past. It is not uncommon to see a female being the bread-winner in the family and the male taking on more parental responsibilities.

A restricted model test was conducted to determine if separate models should be estimated for males and females. The null hypothesis for such a restricted model states that the coefficients for males and females are the same, and the alternative hypothesis is that at least one is not the same. Table 19 displays the results of the restricted model test. With a p-value of 0.0001, the null hypothesis must be rejected. However, due to the small number of females and the fact that female is not significant in the model, only one model was utilized. Follow-on studies might want to estimate separate models for men and women.

Table 19. Restricted Model Test for Gender

Restricted Test	Log Likelihood	P-value	Probability
Gender	45.154	0.0001 ***	0.9999

*** Significant at the .01 level
Source: Author, derived from survey data

Family status also was not significant in the model, which rejects the hypothesis, that an individual with family members (spouse or children) is more likely to remain in the reserves due to family responsibilities and

obligations than a single member with no children. It is possible that, although single members may not have immediate families (spouse or children) they may have a "significant other" which would make their responsibilities similar to a respondent with family members or they may be trying to get ahead in life financially, planning for the likelihood that they will have families in the future.

Among the race/ethnicity subgroups, the coefficient of BLACK was significant at the .05 level and the coefficient of Asian was significant at the 0.10 level. This clearly supports the hypothesis that minorities are more likely to remain in the reserves than Caucasians. However, the coefficients of Hispanic, Native American and Other_Race were not significant in the model. It is possible that these race/ethnicity groups do not perceive the military as offering more equitable opportunities than are afforded them in the civilian labor market. Although not all the race/ethnic group variables were independently significant, a joint significance test can be utilized to determine if, as a group, the variables are important in the model. Table 20 displays the results of the joint significance test for race/ethnicity. The test indicates that together, the RACE_ETHNICITY variables are not significant. Nonetheless, prior studies have determined these variables as being significant and they were retained in this model.

Table 20. Joint Significant Test for 'RACE_ETHNICITY'

Variable	Wald Chi-Square	DF	PR > Chi-Square
RACE_ETHNICITY	5.3137	5	0.1894

Not significant at any level
Source: Author, derived from survey data

b. Reserve Characteristics

Only 5 of 19 reserve characteristic variables are significant in the model. Of the pay groups, MIDGRADE5 and MIDGRADE6 were positive and significant at the 0.05 level. This supports the hypothesis that more senior individuals are likely to remain in the reserves to realize a return on their effort in achieving a higher rank. However, the Senior (E7-E9) paygrade was not significant. A joint significance test was performed to determine if the 'Paygrade' variables are jointly significant. Table 21 displays the results of the test. 'Paygrade' is jointly significant at the 0.05 level.

As hypothesized, the effect of YRS_SERV (total years of service) is positive and significant at the 0.10 level. The more time an individual has vested in the service the more likely he or she is to realize a return on his or her investment by staying to retirement. However, YRS_SEL (total years as a SELRES) is not significant. This doesn't indicate that it isn't an important variable and should be excluded, since it is collinear with YRS_SELRES. A joint significance test was also conducted for the Time-in-Service variable (YRS_SERV and YRS_SEL) and the results are displayed in Table 21. Time-in-Service is significant at the 0.01 level and therefore both variables were retained in the model.

Although it was hypothesized that a PRIOR (prior enlisted SELRES) is more likely to stay to retirement to realize a return on his or her active duty time, the varaible was not significant in the model. A PRIOR individual typically has earned more points toward retirement as compared to a non-prior Active Duty service SELRES with the same amount of years served. As previously mentioned, PRIOR is correlated with YRS_SELRES and Senior and this correlation is likely to have reduced its significance by inflating its standard error. The variable PRIOR was retained in the model.

Of the Community (occupational grouping) variables, only 3 of the 11 variables were significant: Cryptology was significant at the 0.01 level and negative; Medical was significant at the 0.05 level and also negative; Supply was significant at 0.10 level and positive. It was hypothesized that all community variables would have negative effects as compared to the Administration community, due to differences in working conditions in the Administration occupations. The Supply community variable was positive, which was unexpected. Those in the Supply community work in similar environments to the Administration occupations. However, Supply reservists may not perform as many monotonous tasks as the Administration community and this may explain why those in the Supply occupations would be more likely to stay to retirement compared to a respondent in the Administrative community. A joint significance test was performed to determine if the Community's were significant as a group in

the model. Table 21 indicates that Community is jointly significant at the .01 level and all the community variables were retained in the model.

Table 21. Joint Significant Test for Reserve Characteristic Variables

Variable	Wald Chi-Square	DF	PR > Chi-Square
Paygrade	8.6213	3	0.0174**
Time-in-Service	9.4720	2	0.0044***
Community	28.3582	11	0.0015***

*** Significant at the .01 level ** Significant at the .05 level
Source: Author, derived from survey data

c. Mobilization Experiences

(1) General. Fourteen of 18 mobilization experience variables are significant at least at the 0.10 level. For the subgroup mobilization (general) PRIORMOB1, PRIORMOB2, VLNTRD, REPROT_TIME, CIVJOB, NMPS, and DELAY were all significant. The only variable that was not significant is MOBORDERS1_11 (mobilization orders less than 12 months).

The coefficient of PRIORMOB1 was positive and significant at the 0.05 level and the coefficient of PRIORMOB2 was also positive and significant at the 0.01 level. Both contradict the hypothesis that having prior mobilization experiences will have a negative influence on intention to stay to retirement due to the impact on the reservists' civilian and personal lives. It is possible that their previous experience helped prepare them for

their current mobilization and their learning curve for a mobilization is not as steep as for those who are experiencing their first mobilization.

The coefficient of the variable VLNTR (volunteered for mobilization) is positive and significant at the 0.05 level. This supports the hypothesis that if an individual volunteers for the mobilization then that individual desires to participate in mobilization and this should have a positive influence on the individual staying to retirement.

The coefficient of the variable CURRMOB (currently mobilized) is negative and significant at the 0.10 level. This supports the hypothesis that an individual who is currently mobilized is more likely to recall the negative experiences of mobilization compared to an individual who is no longer mobilized and is no longer experiencing the negative aspects of mobilization.

The coefficient of the variable ORDERS1_11 (mob orders < 12 months) is not significant in the model. This does not support the hypothesis that the shorter the mobilization, the quicker an individual can return to his or her civilian life. So, it appears that there is no difference in retention plans due to differences in the length of time for which mobilization orders are written. It is possible that those who had orders for 12 months or longer are influenced by the increase in retirement points earned by performing the longer mobilization.

The coefficient of the variable REPORT_TIME was positive and significant at the 0.01 level. This supports the hypothesis that although minimal notice was

given for mobilization, individuals who felt they were given adequate notification were more likely to plan to stay to retirement.

The coefficient of the variable CIVJOB is positive and significant at the 0.01 level. This supports the hypothesis that if respondents perceive their current mobilization to have a positive effect on their job they are more likely to stay to retirement than those who have experienced a negative effect on their civilian jobs. Sometimes, a break from the normal civilian routine, via mobilization, can rejuvenate interest in a civilian job. Also, the Navy Reserve has increased its communication with civilian employers, both to thank them and to reward them for their support and also to educate them on the laws regarding civilian employment and the reserves.

The coefficient of NMPS is positive and significant at the 0.01 level. This supports the hypotheses that if an individual perceived the experience at NMPS to be positive then it is expected to positively influence the SELRES' career intentions. DELAY was also positive and significant at the 0.01 level. Although most individuals did not believe they were fully informed about the rules on how to delay the reporting date for mobilization, many probably did not need to delay their reporting date. By having a delay policy in place, even though it may not be needed, should positively influence an individual's intent to stay in the reserves.

(2) Gaining Command. The coefficients of all gaining command variables are positive and significant. The variable GAINCMD is significant at the 0.01 level.

This supports the hypothesis that if individuals are mobilized either at or close to their drill site then they are more likely to stay to retirement. If respondents are mobilized to the same gaining command as their drill site then they are familiar with the command in general and have an immediate understanding of the command climate and how the organization operates. If not mobilized to the same gaining command as their drill site but to the same geographical region then individuals may already be familiar with the area or they may even be close to home, since most drill sites are located near an individual's home.

The coefficient of the variable INTERESTING is positive and significant at the 0.01 level. This supports the hypothesis that if an individual perceives the mobilization duty to be interesting then he or she is likely to stay to retirement. It is possible that if the job is interesting, it can offset the fact that it may not be related to their reserve job, reserve rate, or civilian job or it may be interesting because it is related to them.

The coefficient of the variable RANKREL (responsibility of mobilization billet related to rank) is positive and significant at the 0.10 level. This supports the hypothesis that if a respondent perceives the billet to be commensurate with his or her rank then that individual is likely to stay. SELRES want to be treated as equals to active-duty personnel and part of that is being assigned responsibilities appropriate to their rank, regardless of whether they are serving as SELRES on their annual training or as mobilized SELRES on active-duty.

The coefficient of the variable CMDLDRSHP (command leadership) is positive and significant at the 0.01 level. This supports the hypothesis that a positive experience with CMDLDRSHP is expected to result in a mobilized enlisted SELRES staying to retirement. The Navy and Navy Reserves are continually educating command leadership on active-reserve integration. Command Leadership sets the tone for command morale and if command morale is good, then this positive experience should influence a respondent to 'stay to retirement.'

(3) Pay and Benefits. Only two of the pay and benefit variables have significant coefficients. The variable PAYDIFF is positive and significant at the 0.01 level. This supports the hypothesis that if the financial package (base pay, allowance and tax advantages) is as good or better than what a SELRES receives in the civilian sector, then the reservist will be more likely to stay to retirement. The Department of Defense has done a good job in decreasing the pay gap between the military and the civilian sector and apparently it is paying off.

The effect of the variable CMSARY (commissary) is not significant. This rejects the hypothesis that being able to utilize the commissary will positively influence an individual to stay to retirement. The commissary may offer discounted shopping, but not all SELRES, or their families, live close enough to take advantage of the availability of the commissary and may be indifferent to this benefit. If a SELRES is mobilized in a hostile area, how often is he or she truly concerned about the availability of the commissary?

The variables MEDCARE (medical care) and DENTCARE (dental care) are not significant. This rejects the hypothesis that a positive view of medical and dental benefits will influence a mobilized enlisted SELRES to 'stay to retirement.' It is possible that a respondent did not have a need for medical or dental care during the mobilization or the treatment sought may have been routine. Or if a respondent has a family, the family may have maintained their civilian health care plan instead of the Navy's.

Finally, the coefficient of the variable EDBNFT (educational benefit) is positive and significant at the 0.05 level. This supports the hypothesis that the Navy is extremely dedicated to providing educational opportunities for their sailors and these benefits will have a positive influence on an individual's intent to 'stay to retirement.' While mobilized, sailors can utilize Tuition Assistance (TA) to pay for college courses if their duties permit. In addition, some states, such as Illinois, also provide educational benefits after a specified number of days of active-duty service, even for SELRES. Reservists who qualify can take advantage of these benefits after mobilization.

3. Partial Effects of Significant Variables

The notional person (base case) approach is utilized in describing the partial effect of each of the explanatory variables on the probability of 'staying to retirement.' For binary variables, the notional person is assigned a value of 0, and for continuous variables, assigned the mean value. Once the notional person's individual

characteristics are assigned, then the model can be used to predict the probability of "stay to retirement" for that hypothetical person. Then, each explanatory variable can be altered by increasing its value by one unit while holding all the other variables constant to determine the partial effect on the 'stay to retirement' probability. Table 22 displays the partial effects of all significant variables in the 'stay to retirement' model.

Table 22. Partial Effects of Significant Variables in the 'Stay to Retirement' Model

Base Case: Probability of Staying Until Retirement=0.09194	
Demographic Characteristics	
Black/African American (BLACK)	0.0291**
Asian/Pacific Islander (ASIAN)	0.0349*
Reserve Characteristics	
Midgrade5 (E-5)	0.0231*
Midgrade6 (E-6)	0.0216*
Total years service	0.0021*
Cryptology (CRYPTO)	-0.0624***
Medical/Dental (MEDICAL)	-0.0356
Supply*	0.0377
Mob (General)	
Once before (PRIORMOB1)	0.0278**
Twice or more (PRIORMOB2)	0.2093***
Volunteered (for Mob)**	0.0313**
CURRMOB (currently mobilized)	-0.0182**
Report_Time	0.0569***
CIVJOB	0.0902***
NMPS	0.0357***
DELAY (inform to some extent)	0.0453***
Mob (Gaining Command)	
GAINCMD (same/close to drill)	0.0372***
INTRSTNG	0.1103***
RANKREL	0.0160*
CMDLDRSHP	0.1357***
Mob (Pay and Benefits)	
PAYDIFF	0.0507***
EDBNFT	0.0268**

*** Significant at the .01 level ** Significant at the .05 level
* Significant at the 0.10 level
Source: Author, derived from survey data

a. Demographic Characteristic Variables

Black and Asian are the only demographic characteristic variables that are significant in the model. The effect of each variable compared to the base case mobilized enlisted SELRES, holding all other variables constant is:

(1) Black. A Black respondent is 2.9 percentage points more likely to intend to stay to retirement in the reserves than a Caucasian mobilized enlisted SELRES respondent.

(2) Asian. An Asian respondent is 3.5 percentage points more likely to intend to stay to retirement in the reserves than a Caucasian mobilized enlisted SELRES respondent.

b. Reserve Characteristic Variables

The reserve experience variables that are significant in the stay-to-retire model are: TRAINING, DESIGWORK, RECOGNITION, FAMILY, CIVJOB, EDUCATION, OFFICERS, CAREER, and MEANING. The effect of each variable compared to the base case reserve respondent, and holding all other variables constant, is as follows.

(1) MIDGRADE5. A respondent in the E5 paygrade is 2.3 percentage points more likely to intend to stay to retirement in the reserves than a junior enlisted mobilized SELRES respondent.

(2) MIDGRADE6. A respondent in the E6 paygrade is 2.1 percentage points more likely to intend to stay to retirement in the reserves than a junior enlisted mobilized SELRES respondent.

(3) YRS_SERV. If a respondent's total year of service in the SELRES increase by one year than the notional person, then the probability of intent to stay in the Navy Reserves until retirement is 0.2 percentage points higher. (Notional person mean years of service is 13.16 years)

(4) Cryptology Community. A respondent in the Cryptology community is 6.2 percentage points less likely to intend to stay to retirement in the Navy Reserves than a mobilized enlisted SELRES in the Administrative community.

(5) Medical Community. A respondent in the Medical/Dental community is 3.5 percentage points less likely to intend to stay to retirement in the Navy Reserves than a mobilized enlisted SELRES in the Administrative community.

(6) Supply community. A respondent in the Supply community is 3.8 percentage points more likely to intend to stay to retirement in the Navy Reserves than a mobilized enlisted SELRES in the Administrative community.

c. Mobilization Characteristic Variables

(1) PRIORMOB1. A respondent who has only been mobilized once before is 2.8 percentage points more likely to intend to stay to retirement in the Navy Reserves than a first-time mobilized enlisted SELRES.

(2) PRIORMOB2. A respondent who has been mobilized at least twice before is 20.9 percentage points more likely to intend to stay to retirement in the Navy Reserves than a first-time mobilized enlisted SELRES.

(3) VLNTR. A respondent who has volunteered for the mobilization is 3.1 percentage points more likely to intend to stay to retirement in the Navy Reserves than a member that did not volunteer for their current mobilization.

(4) CURRMOB. A respondent who is currently mobilized is 1.8 percentage points less likely to intend to stay to retirement in the Navy Reserves than an enlisted SELRES who has completed his or her mobilization.

(5) REPORT_TIME. A respondent who perceives the amount of time given to report to the Reserve Center once notified of mobilization as an influencer to stay to retirement is 5.7 percentage points more likely to stay to retirement than a respondent who does not.

(6) CIV_JOB. A respondent who perceives the effect of his or her current mobilization on his or her civilian job as a positive influencer to stay to retirement is 9.0 percentage points more likely to stay to retirement than a respondent who does not.

(7) NMPS. A respondent who perceives the treatment received at NMPS during his or her current mobilization as an influencer to stay to retirement is 3.6 percentage points more likely to stay to retirement than a respondent who does not.

(8) DELAY A respondent who perceives that at least to some extent he or she was informed of all the rules on how to delay his or her reporting date as an

influencer to stay to retirement is 4.5 percentage points more likely to stay to retirement than a respondent who does not.

(9) GAINCMD. A respondent who mobilized at or near his or her drilling site is 2.7 percentage points more likely to intend to stay to retirement in the Navy Reserves than a mobilized enlisted SELRES who has a gaining command that is nowhere near his or her drill site.

(10) INTRSTNG. A respondent who perceives the tasks assigned during mobilization were interesting is 11 percentage points more likely to stay to retirement than someone who does not believe the tasks were interesting.

(11) RANKREL. A respondent who perceives the level of responsibility assigned for his or her job during mobilization was relevant to his or her rank is 1.6 percentage points more likely to stay to retirement than someone who does not.

(12) CMDLDRSHP. A respondent who perceives leadership at the gaining command as a positive influence is 13.6 percentage points more likely to intend to stay to retirement in the Navy Reserves than someone who does not.

(13) PAYDIFF. A respondent who considers the difference between civilian pay and active duty pay while mobilized as a positive influence is 5.0 percentage points more likely to intend to stay to retirement in the Navy Reserves than a respondent who does not.

(14) EDBNFT. A respondent who perceives educational benefits while mobilized as a positive influencer is 2.7 percentage points more likely to intend to stay to retirement in the Navy Reserves than a respondent who does not.

C. SUMMARY

This chapter presented the logistic regression results for the stay-to-retire model by identifying the explanatory variables that influence a mobilized enlisted SELRES' retirement intentions. There were 46 explanatory variables utilized in the model, which included demographic characteristics, reserve characteristics and mobilization experiences. In all, 22 variables were statistically significant. Some variables were not individually significant, however, joint significance tests were performed (for RACE_ETHNICTY, UNIT_TYPE, PAYGRADE, TIME-IN_SERVICE, and COMMUNTIY) to evaluate the variables as a group. Although UNIT_TYPE and RACE_ETHNICITY were not found to be significant in the joint significant tests, it was determined that they were significant in other studies and were retained in the model. Furthermore, it was hypothesized that YRS_SELRES, PRIOR and SENIOR would all be positive and significant but none were, likely due to multi-collinearity.

The mobilization experience variables had the greatest influence on an individual's intent to stay to retirement in the Navy Reserves. In fact, an individual who had been mobilized at least twice prior to the current or most recent mobilization was more likely (by 20 percentage

points) to stay to retirement than someone who had never been previously mobilized. One would have expected just the opposite.

V. SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

A. SUMMARY

Numerous retention studies have been conducted to identify factors, both positive and negative, that influence an individual's intention to remain in the service. By identifying the various factors that impact retention, policies and programs can be shaped to alter retention behavior and to meet desired manpower requirements.

Utilizing data contained in the *2002-2004 Navy Reserve Career Decision Survey*, this study identifies self-reported factors that affect the decision of mobilized enlisted SELRES members to remain in the Navy Reserves. A logistic regression model was estimated for 2652 enlisted survey respondents. While demographic and reserve characteristics were found to be important predictors of retention behavior, this study found that the mobilization experiences of Navy enlisted SELRES members are very important predictors.

1. Mobilization Experiences

Mobilization experiences were divided into three broad categories: general; gaining command; and pay and benefits. About 77 percent of the mobilization variables utilized in the model were statistically significant and the ones that had the greatest impact were prior mobilizations (members that had been previously mobilized), command leadership at the gaining command, an interesting mobilization assignment, effect this mobilization had had

on civilian job, and the difference in civilian a member would receive and the amount received while mobilized on active-duty.

As the number of previous mobilizations increased so did the self-reported intent of an enlisted SELRES member to stay to retirement. With the increased operational commitments of the Navy's Reserves, this is an intriguing but limited discovery. It is intriguing because one would expect this to have an inverse relationship; that is, as the number of mobilizations increase, the likelihood to 'stay-to-retirement' would be expected to decrease. It is limited because the survey questionnaire sought only the number of previous mobilizations and not how long it had been between mobilizations. If the previous mobilization had occured in the early 1990's during Operations Desert Storm/Shield, then it is difficult to apply this finding to the current GWOT period. The more time an individual has served in the reserves the more likely he or she is to have been mobilized previously. If the data would have provided he number of mobilizations since 9/11 or in the last five years, this could have provided insight into the effect of an increase in operational tempo (OPTEMPO) on the intention of an enlisted SELRES to remain in the reserves. However, even with the data limitations, this is a finding with positive implications for the reserves since it is expected that a SELRES member will be mobilized 1 in every 5 years.

Command leadership at the gaining command greatly impacts a SELRES members' reported intention to stay in the reserves. Most SELRES members perceived command leadership as a factor that positively influenced their intent to stay

to retirement. This can be directly attributed to the 'one Navy' concept and in the Navy Reserves educating active duty components on the diverse challenges facing a mobilized SELRES compared to an active duty sailor.

A mobilized SELRES member who perceived his or her mobilization assignment as 'interesting' is more likely to stay to retirement than a SELRES member who did not. The variable INTERESTING was correlated with the reserve job being related to an individual's skill set (reserve rate, reserve job, civilian job). It appears that the Navy is doing a good job matching selected reservists to mobilization billets. It is also possible that there were some individuals who were afforded opportunities outside their skill set and found the job interesting for that reason.

The effect of mobilization on the reservist's civilian job is an important factor in influencing their intention to remain in the reserves. The Navy is continually developing relationships with civilian employers by recognizing employers for their support and by providing information on their legal responsibilities to employees who are members of the military reserve components.

The difference between civilian pay and the active duty pay received while mobilized is also an important retention factor. This is significant since previously it had been perceived that many SELRES members were experiencing an economic loss when mobilized.

2. Demographic and Reserve Characteristics

Only 7 of the 28 demographic and reserve variables are significant in the logistic regression model. The demographic indicator race/ethnicity is a significant factor in members' retention to retirement. In particular, Blacks and Asians are more likely to stay to retirement than Caucasians.

The reserve characteristic indicators -- pay grade, time-in-service and occupation community -- are significant predictors of mobilized enlisted SELRES members career intentions. Those in the higher pay grades (E-5 and E-6) are more likely to stay to retirement than members in the junior paygrade. Being in paygrades E-7 to E-9 were not significant in the model due in large part to collinearity with other variables. Total years of service were significant but the effect of an additional year of service from the mean was only a 0.2 percentage point increase in intent to stay to retirement. As far as the occupation communities, cryptology and medical/dental are less likely to stay to retirement and those in supply are more likely to stay to retirement than an individual in the administration community.

B. RECOMMENDATIONS

In the dynamic environment in which the military is currently operating, it is imperative to continue to collect and analyze data to provide information that will aid in the implementation of manpower and personnel policy. It is recommended that the Navy Reserve continue its survey program and expand data collection on mobilization issues.

It should also conduct follow-on retention studies of SELRES members' career intentions, and consider other policy implications.

1. Data Collection

As mobilizations increase in the future, it is expected that the reserves will experience the same retention challenges as the active duty military has encountered with multiple deployments. The data for this study was collected during the period from April 2002 to 2004 and, although some surveyed individuals may have been mobilized more than once since 9/11, it is likely that most respondents who were mobilized previously had participated in Operation Desert Shield/Storm not the GWOT or Operations Enduring Freedom/Operation Iraqi Freedom (OEF/OIF). It is recommended that the survey be expanded to include specific information about the timing of previous mobilizations. For example, a questionnaire item might ask "How many times have you been mobilized in the last 5 years?" This may provide valuable information on a civilian employer's effect on mobilized SELRES career intentions. Will increased OPTEMPO (multiple mobilizations over a five year period) affect a SELRES members career intentions?

It would be useful to know if there are differences in retention for SELRES who are mobilized to billets in the U.S. as compared to those sent to hostile danger areas. A question could be added to the survey to specify geographic location during mobilizaiton: in CONUS; outside CONUS non-hostile; or outside CONUS hostile.

Efforts should be made to ensure all SELRES members complete the survey while mobilized. Data from the survey

would be more consistent and probably more accurate if obtained while all respondents were performing the mobilization.

Mobilization surveys should be conducted annually to assess the most current perceptions and career intentions of SELRES members. Furthermore, have both mobilized and non-mobilized SELRES members complete the surveys. Although some individuals may not have yet been mobilized, has the possibility of mobilization had an effect on their reserve career intentions?

A post-mobilization survey could be conducted 6 months to a year after demobilizing to collect data on the actual impact of the mobilization on civilian employment. Numerous relevant questions could be asked. How long did it take to where you felt comfortable adjusting back into your civilian job? Did you assume the same position that you held before the mobilizations? Have you switched companies since returning from mobilizations? What impact would another mobilization in the next three years have on your SELRES career intention?

2. Follow-on Studies

As the active-duty Navy nears the end of its force shaping in 2013, the number of prior service members (NAVETS) available for enlistment in the reserves will be smaller, so it is imperative that the reserves focus on retention and the recruitment of non-prior service members. Have the recent increases in mobilizations impacted non-prior service affiliation? What about adult influencers? Would an adult recommend the Navy Reserves to a non-prior

service youth? Expanding research in affiliation behavior of non-prior service youth may provide valuable information on the ability to meet future manning requirements.

Constructing separate models for different subgroups may provide useful information. There may be differences between officers and enlisted personnel in the effects of mobilization on career intentions that would be revealed in a future study similar to this one that focused on officers rather than on enlisted personnel. As mentioned in this study, a restricted model test indicates that separate models could be constructed for enlisted men and women. In addition, it would be interesting to consider estimating separate models for those currently mobilized and those who have completed mobilizations.

Impact of increased mobilizations (OPTEMPO) is another follow-on study that may provide useful information for policy makers. With additional data available, does increased OPTEMPO (multiple mobilizations over a five year period) impact SELRES career intentions? Has a civilian employer's support for their SELRES employees changed over time? Is there a time-effect associated with a civilian employer's influence on a SELRES career intentions. With increased mobilizations, how likely is it that a civilian employer would hire a SELRES in the current environment? The civilian labor market is dynamic and after a 12-month mobilization, the market and the organization from which the person was mobilized is not likely to be the same. Is there a civilian occupational, employment, or wage loss

associated with mobilizations? How long does it take a mobilized SELRES to get back up to speed in their organization or firm?

Pay and benefits are important influencers for a SELRES' intention to stay to retirement and should be studied to evaluate these impacts. Pay for active duty and mobilized SELRES are the same for each pay grade. Have active-duty pay raises over the last few years to decrease the gap between military and civilian pay positively impacted a mobilized SELRES member's intention to stay to retirement? The commissary claims an average savings of over 20% compared to civilian supermarkets and this economic benefit should not be under-estimated. Many SELRES members do not live within 50 miles of a military installation that offer this benefit. If the benefit is available but not readily accessible (within 50 miles) is it really a benefit? If the benefits were readily available what impact would it have on a SELRES career intentions? Medical and dental benefits for an enlisted mobilized SELRES could also be important aspect of this follow-on study with future policy implications. The Navy spends billions of dollars every year on health care and in this study these benefits were not significant predictors of selected reservists' retention intentions. Why weren't these benefits important? Were they not needed or did the member maintain these benefits from his or her employer? There have been previous discussions on offering medical and dental coverage for SELRES and their families while in a drilling status and not on active-duty If this benefit is available whether mobilized (a reduced/no costs depending on which program is selected) or in a drilling status (at a

costs similar to or less than civilian healthcare coverage, then SELRES may perceive this as a benefit that influences their career decision. As healthcare rises and civilian companies reduce benefits or increase cost share, this may be an alternative retention tool.

Finally, a study could be conducted for SELRES with family members. What impact do family members have on a mobilized SELRES member's career intention? Have family members attitudes affected the career intentions of a mobilized SELRES member? What benefits do reservists and their family members perceive as important in influencing their career decisions? As previously mentioned, many SELRES do not live within 50 miles of a military installation. How many families believe there are an adequate number of authorized health care providers in their area? Since most mobilization orders are written for a year, is it easier for a family to maintain their medical/dental benefits through their civilian employer (if available) rather than using the Navy's medical and dental benefits?

3. Policy Implications

The Navy is continually improving and implementing policies to meet retention goals. Short-term notification to mobilization for SELRES has decreased since the initial mobilizations occurring after 9/11. Now that most of the billets have been identified, perhaps a detailing process should be put in place. It appears that most SELRES members felt that their mobilization assignment was interesting (due in part to utilization of their skill set) even though there was little or no negotiation on their

orders. Apparently, those individuals in the Individual Augmentation division have been doing an accurate job of matching skill sets to billets. However, if mobilization assignments were made available by skill set, rate, or civilian work experience (including reserve and civilian skills) and were made available only to those individuals, then maybe more reservists would volunteer if they had a choice of orders. To maintain the "One Navy" concept, if a reservist is going to be mobilized, he or she should have a choice similar to the detailing process for active duty sailors.

C. CONCLUSION

This Thesis is an extension of a prior Naval Postgraduate School Thesis and focuses on how demographic and reserve characteristics and mobilization experiences influence self-reported career intentions of mobilized enlisted SELRES. This study clearly indicates that mobilization experiences have the greatest effects on a respondent's career intentions and should be considered in future reserve enlisted retention studies and policy and program improvement/implementation.

APPENDIX A. ALTERNATIVE LOGISTIC REGRESSION MODEL EXCLUDING "NO EFFECT" RESPONSES FOR THE "STAY TO RETIRE" MODEL

A separate logistic regression model was constructed that was based on a sample that excluded observations of mobilized enlisted SELRES members who responded that their current mobilization had "no effect" on their career intentions. Once these individuals were excluded from the model, there were 1,344 observations. The logistic regression results for the 'stay-to-retire' model are displayed in Table 23.

There are many similarities between the significant variables in both models. In the new model, 21 of the 46 variables were significant, which is only one less than the model that includes "no effect." In both models, the majority of the significant factors were the mobilization characteristic variables. RACE_ETHICITY variables were the only variables significant from the demographic characteristics in both models.

However, there are a few minor differences to note between the two models. The revised model had two more RATE_GROUPS that were statistically significant compared to the basic model and Pay group/Paygrade and YRS_SERV were not significant in the revised model but significant in the basic model.

Table 23. Logistic Regression Results for Revised (excludes responses of 'no effect')'Stay to Retire' Model (n = 1,344)

Variable Name	Coefficient	PR>Chi-SQ
Demographic Characteristics		
Gender		
FEMALE	-0.3001	0.1125
FAMILY STATUS		
MWC (married with children)	0.1440	0.2638
MNC (married no children)	0.3224	0.2639
SWC (single with children)	-0.2344	0.1256
RACE_ETHNICITY		
HISP (Hispanic)	0.2643	0.1847
BLACK (Black/African American)	0.4456*	0.0599
ASIAN (Asian/Pacific Islander)	0.7394**	0.0375
NATAM (Native American/Eskimo)	1.4993**	0.0215
OTHER_RACE (Other Race)	-0.1260	0.4235
Reserve Characteristics		
Pay group/Paygrade		
MIDGRADE5 (E-5)	0.0707	0.3906
MIDGRADE6 (E-6)	-0.1912	0.2671
SENIOR (E7-E9)	-0.2604	0.2643
YRS_SERV (total years service)	-0.0102	0.3811
YRS_SELRES (total years SELRES)	0.0291	0.1722
PRIOR (active-duty service)	-0.0629	0.4120
RATE_GROUPS		
AVIAT (Aviation)	-0.6626*	0.0544
CRYPTO (Cryptology)	-2.1087***	0.0001
INTEL (Intelligence)	-1.1314**	0.0156
MEDICAL (Medical/Dental)	-1.6558***	0.0001
BEES (Seabees)	-1.1607***	0.0029
SECUR (Security)	-0.1430	0.3618
SUBS (Submarine)	-0.6909	0.2413
SUPPLY	0.0702	0.4280
SURFCS (Surface Combat Systems)	-0.7623**	0.0298
SURFENG (Surface Eng)	-0.1097	0.3902
SURFOPS (Surface Ops)	-0.3503	0.1528
TYPE UNIT SERVING		
AIR	-0.3056*	0.0751
SHIP	1.3389	0.1644
Mob (General)		
PRIORMOB		
PRIORMOB1 (mob once before)	0.2680	0.1664
PRIORMOB2 (mob twice or more)	2.3444***	0.0008

Variable Name	Coefficient	PR>Chi-SQ
Demographic Characteristics		
VLNTR (volunteered for mob)	0.9485***	<0.0001
CURRMOB (currently mobilized)	-0.5444**	0.0137
MOBORDERS (< 12 months)	0.4481	0.1328
REPORT_TIME	0.8436***	<0.0001
CIVJOB	0.9630***	<0.0001
NMPS	0.5902***	0.0033
DELAY (inform to some extent)	0.6681***	0.0017
Mob (Gaining Command)		
GAINCMD (same/close to drill)	0.3371**	0.0315
INTRSTNG	1.5676***	<0.0001
RANKREL	0.2363	0.1126
CMDLDRSHP	1.5680***	<0.0001
Mob (Pay and Benefits)		
PAYDIFF	1.2646***	<0.0001
CMSARY	0.0081	0.4914
MEDCARE	0.4273	0.1026
DENTCARE	0.4007	0.1277
EDBNFT	-0.0769	0.3937

*** Significant at the .01 level ** Significant at the .05 level
* Significant at the 0.10 level
Source: Author, derived from survey data

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APPENDIX B. NAVY RATINGS AND TITLES

General Rating	Long Title
AB	AVIATION BOATSWAIN'S MATE
AC	AIR TRAFFIC CONTROLLER
AD	AVAITION MACHINIST'S MATE
AE	AVAITION ELECTRICIAN'S MATE
AG	AEROGRAHPER'S MATE
AK	AVAITION STOREKEEPER
AM	AVIATION STRUCTURAL MECHANIC
AN	AIRMAN (UNRATED)
AO	AVIATION ORDANCEMAN
AS	AVIATION SUPPORT EQUIPMENT TECHNICIAN
AT	AVIATION ELECTRONICS TECHNICIAN
AW	AVIATION ANTISUBMARINE WARFARE OPERATOR
AZ	AVIATION MAINTENANCE ADMINISTRATIONMAN
BM	BOATSWAIN'S MATE
BU	BUILDER
CE	CONSTRUCTION ELECTRICIAN
CM	CONSTRUCTION MECHANIC
CT	CRYPTOLOGIC TECHNICIAN
CTA	CRYPTOLOGIC TECHNICIAN (ADMINISTRATIVE)
CTI	CRYPTOLOGIC TECHNICIAN (INTERPRETIVE)
CTM	CRYPTOLOGIC TECHNICIAN (MAINTENANCE)
CTO	CRYPTOLOGIC TECHNICIAN (COMMUNICATIONS)
CTR	CRYPTOLOGIC TECHNICIAN (COLLECTIONS)
CTT	CRYPTOLOGIC TECHNICIAN (TECHNICAL)
DC	DAMAGE CONTROLMAN
DK	DISBURSING CLERK
DM	ILLUSTRATOR DRAFTSMAN
DT	DENTAL TECHNICAN
EA	ENGINEERING AID
EM	ELECTRICIAN'S MATE
EN	ENGINEMAN
EO	EQUIPMENT OPERATOR
ET	ELECTRONICS TECHNICIAN

Source: Author

General Rating	Long Title
EW	ELECTRONICS WARFARE TECHNICIAN
FC	FIRE CONTROLMAN
FN	FIREMAN (UNRATED)
FT	FIRE CONTROL TECHNICIAN
GM	GUNNER'S MATE
GS	GAS TURBINE SYSTEMS TECHNICIAN
HM	HOSPITAL CORPSMAN
HT	HULL MAINTENCE TECHNICIAN
IC	INTERIOR COMMUNICATIONS ELECTRICIAN
IS	INTELLIGENCE SPECIALIST
IT	INFORMATION SYSTEMS TECHNICIAN
JO	JOURNALIST
LI	LITHOGRAPHERS
LN	LEGALMAN
MA	MASTER-AT-ARMS
MM	MACHINIST'S MATE
MN	MINEMAN
MR	MACHINERY REPAIRMAN
MS	MESS MANAGEMENT SPECIALIST
MT	MISSILE TECHNICIAN
NC	NAVY COUNSELOR
OS	OPERATIONS SPECIALIST
PC	POSTAL CLERK
PH	PHOTOGRAPHER'S MATE
PN	PERSONNELMAN
PR	AIRCREW SURVIVAL EQUIPMENTMAN
QM	QUARTERMASTER
RP	RELIGION PROGRAM SPECIALIST
SH	SHIP'S SERVICEMAN
SK	STOREKEEPER
SM	SIGNALMAN
SN	SEAMAN (UNRATED)
ST	SONAR TECHNICIAN
STG	SONAR TECHNICIAN (SURFACE)
STS	SONAR TECHNICIAN (SUBMARINE)
SW	STEEL WORKER
TM	TORPEDOMAN'S MATE
UT	UTILITIESMAN
YN	YEOMAN

Source: Author

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